

## **Algebra 2**

### **Unit: Exponential and Logarithmic Functions**

#### **Section: Exponential Growth and Decay**

#### **Example: Continuous Compounding Formula**

##### **Problem**

You invest six thousand dollars in an investment account with an interest rate of two point three percent compounded continuously. How much money will be in the account after ten years?

##### **Solution**

Step one is to identify the necessary information to solve this problem. P is equal to six thousand dollars. R is equal to two point three percent or point zero two three. T is equal to ten years.

Now solve the problem using the formula  $A$  of  $t$  is equal to  $p$  times  $e$  to the  $r$  times  $t$  power.  $A$  of  $t$  is equal to six thousand times  $e$  to the point zero two three times ten power.  $A$  of  $t$  is equal to approximately seven thousand five hundred fifty one point sixty.

The total amount of money in the account after ten years is approximately seven thousand five hundred fifty one dollars and sixty cents.